

U.S. Patent Application Serial No. 09/594,091
Response dated September 26, 2003
Reply to OA of July 29, 2003

REMARKS

Claims 1, 3, and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Arita et al. (U.S.P. 6,046,490) in view of Zhang (USP 5, 990,491).

Claims 2 and 4 are rejected under 35 U.S.C. §103(a) as being unpatentable over Arita et al. (USP 6,046,490) and Zhang (USP 5,990,491) as applied to claim 1 above, and further in view of Singh et al. (USP 5,847,464).

Claims 5, and 9-11 are rejected under 35 U.S.C. §103(a) as being unpatentable over Mochizuki et al. (USP 5,990,507) in view of Arita et al. (USP 6,046,490) and Zhang (USP 5,990,491).

Claims 6-8 are rejected under 35 U.S.C. §103(a) as being unpatentable over Mochizuki et al. (USP 5,990,507) in view of Arita et al. (USP 6,046,490) and Zhang (USP 5,990,401), as applied to claim 5 above, and further in view of Singh et al. (USP 5,847,464).

An important point of the present invention is shown for example in Fig. 10 in that nitrogen is introduced all over the surface of the silicon oxide film 33 by a nitrogen plasma processing all over the planarized surface of the silicon oxide film 33.

It is disclosed on page 22, line 24 to page 23, line 19 of the present specification.

On the other hand, Arita discloses in Fig. 1 that a passivation film 14 of silicon nitride or silicon nitride oxide covers an insulating layer 22 and wiring layer 24a, 24b on the insulating layer 22. Accordingly, it is clear that nitrogen cannot enter into the surface of the insulating layer 22 under the wiring layer 24a, 24b. Arita needs a passivation film 14 composed of silicon nitride

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or silicon nitride oxide but the present invention does not need it.

Therefore, the structure between the claimed invention and Arita are quite different from each other.

In the Response to Arguments section of the office action, an emphasis is made regarding a contact being positioned above a silicon oxide film including nitrogen and so forth.

However, a position of the contact was originally not of any importance in the present invention. As can be easily verified from a result of the interview with the examiner dated October 11, 2002, it was introduced in the amendment to make a clear difference in the order of different layers between the present invention and Arita. The same claim language is removed so the emphasis can be placed on the above-mentioned more important matter.

Anyway, the important matter is having nitrogen being introduced "all over the surface" of the insulating layer.

In Arita, nitrogen is not introduced "all over the surface" of the insulating layer.

Arita does not describe a diffusion of nitrogen from a silicon nitride or silicon nitride oxide to the surface of the insulating layer under silicon nitride or silicon nitride oxide. Arita also does not intend and need not make any diffusion. Reconsideration and withdrawal of these rejections are respectfully requested.

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CONCLUSION

If, for any reason, it is felt that this application is not now in condition for allowance, the Examiner is requested to contact Applicant's undersigned attorney at the telephone number indicated below to arrange for an interview to expedite the disposition of this case.

In the event that this paper is not timely filed, Applicant respectfully petitions for an appropriate extension of time. Please charge any fees for such an extension of time and any other fees which may be due with respect to this paper, to Deposit Account No. 01-2340.

Respectfully submitted,

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